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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,501	12/05/2003	Shigenobu Kushihashi	1131-0494P	7190

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EXAMINER

TADESSE, YEWEBDAR T

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 07/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/727,501

Applicant(s)

KUSHIHASHI ET AL.

Examiner

Yewebdar T. Tadesse

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/05/2003</u> . | 6) <input type="checkbox"/> Other: ____.  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schorr et al (US 3,684,135) in view of JP-11-197572 (see English translated Abstract).

Schorr et al discloses (see column 3, lines 15-56 and Figs 1 and 2) a paste application device comprising an application nozzle (2) including a discharge opening directed to face an object that relatively travels with respect to application device (use in continuous rod making machines), the application nozzle discharging liquid fluid (paste) from the discharge opening and applying the fluid to the object; a first tank (container 8)

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storing the fluid to be applied to the object; a second tank (container 72 arranged in series); a supply path connecting the second tank to (pipe 14) the application nozzle (2); feeding means (pipe 10) feeding the fluid from the first tank 8) to the second tank ((72); a supply path (14) connecting the second tank to the application nozzle (2) and pressurizing means (piston member 78 with assemblies) for sealing inside of the second tank (72) and applying a prescribed air pressure to the sealed space of the tank. Schorr et al lacks teaching fluid level-detecting means detecting the fluid level of the stored fluid in the second tank (72) and maintaining means for controlling fluid supply performed by the feeding means based on a detection result of the fluid level. However a coating apparatus provided with coating material supply pipes, tanks, detecting means and control system is well known in the art to efficiently apply coating on the substrate; for instance - JP-11-197572 discloses (see English translated Abstract) a coating applicator having a first tank (5), a second tank (storage container 21); feeding means (pipe 11) supplying coating material to the storage container (21), liquid level detector (6) detecting fluid level of liquid stored in the second tank (storage container 21) and maintaining means (control section 7 with a supply control function) controlling fluid supplied to the storage container (21) based on the liquid level detector 6. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include fluid level-detecting means detecting the fluid level of the stored fluid in the second tank (72) and maintaining means for controlling fluid supply performed by the feeding means based on a detection result of the fluid level in Schorr et al to stably apply a coating material to the substrate even when the coating material is supplied to

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the storage container (second tank) and the coating is applied to the substrate as taught by JP'572.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schorr et al (US 3,684,135) in view of JP-11-197572 as applied to claim 1 above, and further in view of Lockwood (US 3,348,520). Schorr et al lacks teaching a first tank open to the atmosphere. However in the application of coating materials, especially hot melt adhesive, it is known to leave a storing tank open to the atmosphere; for instance – Lockwood discloses (see Fig 5 and claim 1) an open hot melt tank (90). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a tank open to the atmosphere in Schorr et al as desired.

5. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schorr et al (US 3,684,135) in view of JP-11-197572 as applied to claim 1 above, and further in view of Buckler (US 5,999,106). Schorr et al lacks teaching a pressure-detecting indicator detecting pressure of the fluid supplied to the application nozzle and alarm means for giving a prescribed alarm when pressure detected is at a given or higher value. Buckler discloses a dispensing system provided with pressure indicators (sensors 50) and alarm means (display 254) indicating a prescribed alarm when the detected pressure detected by the pressure indicator (sensors 50) is a given or higher value (see Abstract, Fig 3 and column 20, lines 3-27). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a pressure

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detecting indicator detecting pressure of the fluid supplied to the application nozzle and alarm means for giving a prescribed alarm when pressure detected is at a given or higher value to monitor analyze and display adverse flow conditions as taught by Buckler (see Abstract).

6. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schorr et al (US 3,684,135) in view of JP-11-197572 as applied to claim 1 above, and further in view of Abrahams (US 6,206,963), Grutza (US 3,762,882) and Kay et al (US 6,722,584).

Schorr discloses a nozzle (2), however lacks teaching the specific structures of the nozzles as claimed and the coating layer formed on a surface of the main body of the nozzle. Abrahams discloses (see Fig 1-4) a nozzle for the application of a fluid to a passing substrate comprising a conventional nozzle body (2) as described in Fig 1 of the prior art. The nozzle body comprising a valve needle (see column 4, line 25) capable of opening/closing a discharge opening of the application nozzle, a main body having a tip end (nozzle orifice 45, see Fig 2) directed to face the object, a discharge opening formed at the tip end of the main body and discharging the fluid to be applied to the object and a contact surface formed on the tip end of the main body, the contact surface spreading around circumference of the discharge opening and being brought into contact with the object; a discharge hole extending from the discharge opening toward inside of the main body and guiding flow of the fluid from the inside of the main body (see Fig 2); and a corner face (relief section 40) formed along the circumference of

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the discharge opening and chamfering a boundary between an inner wall of the discharge hole and the contact surface into a curved surface (see Fig 4, for channel 48). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a nozzle having a contact surface, discharge opening, a corner surface performing as claimed to evenly apply beads of adhesive. As to the coating layer formed on the main body by diamond electrodeposition coating. Grutza teaches (see Abstract) that a metal surface coated by a diamond electrodeposition produce extremely hard and wear resistant plate. Kay et al teaches (see column 4, lines 31-33) an internal bore of a nozzle honed by diamond to provide a highly polished surface. It would have been obvious to one of ordinary skill in the art at the time the invention was made to coat the main body and the contact surface including the corner face of the inner wall of the discharge hole of Schorr's nozzle as modified by diamond electrodeposition to prevent wear of the nozzle. It would have also been obvious to one of ordinary skill in the art at the time the invention was made to include an interior surface of the nozzle passageway having a polished surface in Schorr as modified to smoothly flow the coating material throughout the passageway of the nozzle.

7. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abrahams (US 6,206,963) in view of Grutza (US 3,762,882) and Kay et al (US 6,722,584).

Abrahams discloses (see Fig 1-4) a nozzle for the application of a fluid to a passing substrate comprising a main body having a tip end (nozzle orifice 45, see Fig 2) directed

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to face the object, a discharge opening formed at the tip end of the main body and discharging the fluid to be applied to the object and a contact surface formed on the tip end of the main body, the contact surface spreading around circumference of the discharge opening and being brought into contact with the object; a discharge hole extending from the discharge opening toward inside of the main body and guiding flow of the fluid from the inside of the main body (see Fig 2); and a corner face (relief section 40) formed along the circumference of the discharge opening and chamfering a boundary between an inner wall of the discharge hole and the contact surface into a curved surface (see Fig 4, for channel 48). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a nozzle having a contact surface, discharge opening, a corner surface performing as claimed to evenly apply beads of adhesive. Abrahams lacks teaching a coating layer formed on the main body by diamond electrodeposition and an inner wall of a passage continuing to the discharge hole of the main body of the nozzle having polished surface. Grutza teaches (see Abstract) that a metal surface coated by a diamond (electrodeposition produce extremely hard and wear resistant. Kay et al teaches (see column 4, lines 31-33) an internal bore of a nozzle honed by diamond to provide a highly polished surface. It would have been obvious to one of ordinary skill in the art at the time the invention was made to coat the main body and the contact surface including the corner face of the inner wall (attaining polished surface) of the discharge hole of Abrahams' nozzle by diamond electrodeposition to prevent wear of the nozzle. It would have also been obvious to one of ordinary skill in the art at the time the invention was made to include



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an interior surface of the nozzle passageway having a polished surface in Schorr as modified to smoothly flow the coating material throughout the passageway of the nozzle.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yewebdar T. Tadesse whose telephone number is (571) 272-1238. The examiner can normally be reached on Monday-Friday 8:00 AM-4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Yewebdar T. Tadesse*

YTT

*Chris Fiorilla*

CHRIS FIORILLA  
SUPERVISORY PATENT EXAMINER

*Au 1734*